

Advanced Server/9000 Installation Guide

HP Systems Networking

Edition 2



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Advanced Server/9000

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Preface

Advanced Server Installation describes a variety of installation tasks that will help you to get Advanced Server for UNIX Systems installed. It also describes various tools that you can use to troubleshoot Advanced Server/9000 installation related problems.

Before installing or upgrading Advanced Server, you should read *Advanced Server/9000 Concepts and Planning*. You also should be familiar with the HP-UX operating system.

This guide contains the following information:

Chapter 1, "Installing Advanced Server/9000," describes how to install Advanced Server/9000 either as a primary or backup domain controller and how to upgrade from a previous AS/U version.

This chapter also describes how to remove Advanced Server, re-install a primary domain controller.

Chapter 2, "Installing Administrative Software," describes how to install Windows NT Server Tools and Windows NT Administrative Tools.

- Install Windows NT Server Tools on a Windows® 95 workstation.
- Install Windows NT™ Administrative Tools on a Windows NT Workstation Version 3.51 or 4.0 computer.

This chapter also describes how to remove Advanced Server, re-install a primary domain controller, and move a LAN Manager server to an Advanced Server domain.

Chapter 3, "Upgrading from LAN Manager 2.2," describes how to upgrade from LAN Manager for UNIX Systems, version 2.2 to Advanced Server/9000.

Chapter 4, "Migrating from LAN Manager/X," describes how to upgrade from LAN Manager/X to Advancer Server/9000.

1 **Installing AS/U**

This chapter describes how to install the Advanced Server /9000 . It contains the following information:

Installing AS/U

- **Clients for AS/U**—describes the supported clients for connecting to an AS/U server.
- **System Configuration Requirements for AS/U**—describes the hardware and software environment needed for installing and running the Advanced Server/9000.
- **Data Needed during Installation**—describes the information that you should have ready before attempting to install or upgrade to the Advanced Server/9000.
- **Installing AS/U Software**--describes how to load the product filesets.
- **Installing a Primary Domain Controller**—describes how to install the Advanced Server/9000 as a primary domain controller.
- **Installing a Backup Domain Controller**—describes how to install the Advanced Server/9000 as a backup domain controller.

NOTE

Before you can install the Advanced Server/9000 on your computer, you must have installed a supported HP-UX operating system (HP-UX 10.20 or later) .

Clients for AS/U

Please check the Release Notes for the latest list of supported clients. The supported clients for connecting to an AS/U server are:

- Windows NT 4.0.
- Windows NT 3.51 with Service Pack 4 or later installed. Service Pack 4 is available from Microsoft . For more details on known problems with NT Servers and Service Packs 2 and 3, refer to the section in this document called “Managing Domains.”
- Windows 95.
- Windows for Workgroups 3.11 with 32 bit TCP/IP.
- LAN Manager 2.2c.

NOTE

The list above is the list of all AS/U clients *not* the list of administrative interfaces. The administrative interfaces are the graphic user interfaces in Windows NT Server Tools or Windows NT Administrative Tools or the command-line `net` commands. Refer to the *Advanced Server/9000 Quick Installation Guide* for details.

Running Windows 95 as a peer server is not supported with AS/U. Windows 95 machines running as peer servers that are sharing files and printers with user-level access control do not work correctly with AS/U. This is enabled through the “Access Control” tab under the “Network” icon of the “Control Panel.” You may share resources on Windows 95 machines using share-level access control.

AS/U, LAN Manager/X, and LAN Manager 2.2 can reside on the same system, but *cannot* be run simultaneously. See chapter 3 “Upgrading from LAN Manager 2.2” for procedures on how to toggle between products.

System Configuration Requirements for AS/U

Install Advanced Server/9000 on an HP 9000 Series 800 Server or Series 700 Workstation.

NOTE

In an HP-UX client-server cluster environment, do not install Advanced Server/9000 on an HP-UX client.

Before you install the Advanced Server/9000 software on the system, verify that you have:

- An HP 9000 Series 700 or 800 computer with HP-UX version 10.20 or later . Verify by using the `uname -a` command.
- The HP LAN/9000 Link networking hardware installed (on some systems, the link, or hardware card, is factory installed).
- A minimum of 32 MBytes of RAM. This information appears on your screen during reboot. If you missed the information when you rebooted, you can type the following to see this information (if you are logged in as root):

`/etc/dmesg` (note: output is in KBytes. Convert to MBytes)

- A minimum of 46 MBytes of free disk space is required to install the Advanced Server/9000 software. Additional disk space (minimum 150 MBytes) is required for Advanced Server/9000 operations such as adding users, creating printer spool files, and creating shares.

NOTE

Depending on your system size and configuration, additional disk space and memory may be required for AS/U system configuration and operation.

To see the available disk space on your system, type:

`/usr/bin/bdf`

(note: output is in KBytes. Convert to MBytes if consulting the following table)

If the disks on your system are configured to use LVM, the minimum available disk space for *installation* of Advanced Server/9000 or migration to it should be as follows:

Typical LVM Mount Point	Minimum MBytes Available	Advanced Server/9000 Directory
/var	15 Mbytes	/var/opt/asu/lanman
/opt	30.5 Mbytes	/opt/asu/lanman
/etc	.5 Mbytes	/etc/opt/asu/lanman

If the disks on your system are configured to use LVM, the recommended minimum available disk space for *operation* of Advanced Server/9000 should be as follows:

Typical LVM Mount Point	Minimum MBytes Available	Advanced Server/9000 Directory
/var	15 Mbytes	/var/opt/asu/lanman

The Advanced Server/9000 event logs, ACL files, user account files, sharefile, and spooler information (such as submitted files, spooler state and so forth) will be saved in **/var/opt/asu/lanman**. Therefore, you may want to allow additional disk space in this directory based on your usage predictions.

Ensure that you have adequate free disk space in **/home** or other volumes where your user files will be saved. This amount of disk space depends on your usage of Advanced Server/9000.

Note: On LVM configurations, you cannot use SAM to expand the **/var** volume. You must use the command line interface. See the *HP-UX System Administration Tasks* for information on how to expand the **/var** volume.

- Swap space required for AS/U is as follows (this is in addition to swap space required by other applications):

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System Configuration Requirements for AS/U

AS/U <i>minimal</i> configuration	7.5 MB swap space
AS/U <i>large</i> configuration	15.0 MB swap space
Each ten clients beyond the first ten (need for lmx.srv processes)	3.0 MB swap space

Minimal configuration is defined as < 10 each configured users, printers, queues, and shares. *Large* configuration is defined as 10000 configured users per domain, or 256 printers, 256 queues, and 5000 shares per server. Using this information as a guideline, scale the swap space on your system as appropriate for your configuration. Swap space can be viewed and configured using the HP-UX SAM utility.

Supported Advanced Server/9000 maximums are as follows:

- 256 printers
- 256 queues
- 700 print jobs
- 1024 users connected to a server
- 1900 files per AS/U directory to be replicated
- 15000 users *per AS/U domain*
- The HP LAN 9000 networking fileset installed and configured. To verify that, examine the **/etc/hosts** file to ensure that your hostname is there by typing: `grep hostname /etc/hosts`

Also, ensure that the IP address for your hostname is different than the loopback address configured for `localhost` (for example, not 127.0.0.1). If this is not true, go to the HP-UX System Administration Manager (SAM) and modify the configuration of the LAN card (`lan0`) to set up the network. For further information on IP addresses and subnetting, see the Hewlett-Packard link manual for the type of LAN installed .

- A hardware drive for the distribution media (such as CD ROM) that contains the Advanced Server/9000 software.
- An existing netdemon must not be running. Verify that the netdemon process is no longer running. Type:

```
ps -ef | grep netdemon
```

If a netdemon process exists, you must explicitly kill that process:

```
kill -9 xxxx (where xxxx is the pid of the netdemon process.)
```

Data Needed during Installation

During the installation of an Advanced Server/9000, you will be prompted to enter specific data items. You should consider the entries you will make in response to these prompts before you begin installing or upgrading. This section describes the information that you should know before you install the Advanced Server/9000 or upgrade from LAN Manager.

Server Name

The server name can be up to 15 characters long and can contain any combination of the following characters:

a - z; A - Z; 0 - 9; ~ ! # \$ % ^ & _ () . -

NOTE

The server name cannot be the same as another Advanced Server/9000, LAN Manager, or Windows NT Server.

During the installation procedure, you can name the Advanced Server/9000 by using any of the following three methods.

1. You can use the default name provided by the server (*servername*). The default name is the *uname* of the HP-UX system name-for example, **abc**.
2. You can enter a unique name with or without an appended extension.
3. You can enter the *uname* of the server, where *uname* is the HP-UX system name for the computer. If you are using DNS to resolve names on your network, this method is recommended. No `listenname` entry will be placed in the **lanman.ini** file.

If you use either of methods 1 or 2 (above), the server will place an entry in the **lanman.ini** file as follows:

```
[server ]
listenname=servername
```

By setting a **listenname** parameter, the Advanced Server/9000 uses its own listener capability.

NOTE

After you have named the server, do not edit the **listenname** parameter in the **lanman.ini** file to change the server name. Use the **joindomain** command to change the server name. For information about the **joindomain** command, see the *Advanced Server/9000 Administrator's Guide*.

Server Role

Every server that you install must be given one of the following two roles in the domain:

- Primary domain controller—Distributes user account information to backup domain controllers and validates network logon requests. There can be only one primary domain controller per domain.
- Backup domain controller—Receives user account information from the primary domain controller and validates network logon requests. Can be promoted to primary if the primary domain controller is not accessible.

Domain Name

The domain name can be up to 15 characters long and can contain any combination of the following characters:

a - z; A - Z; 0 - 9; ~ ! # \$ % ^ & _ () . -

During installation, the system gives the administrator a default name for the domain, which is the HP-UX system name appended with the **_dom** extension--for example, **abc_dom**. The administrator can accept the default domain name or enter another unique name for the domain.

Administrative Account Password

During installation, the system creates an administrative account called *Administrator* to which you should assign a password. Though this is not required, it is strongly recommended. It can be up to 14 characters long. The default password is **password**.

After the server installation is complete, it is recommended that the administrator create another administrative account and password to use for normal administrative tasks on primary and backup domain controllers.

Installing AS/U Software

The following steps will install the Advanced Server/9000 and NetBIOS file sets. Whenever NetBIOS has been installed, a rebuild of the kernel and a system reboot are required.

To *install* the Advanced Server/9000 software, proceed as follows:

1. Check the Release Notes to see if patches are required for your AS/U version.

CAUTION

Install the patches appropriate for your system as described in the “Required Patches” section of the Release Notes. The required patches are not automatically installed as part of the “Factory Integration” (factory preloading) of your product: You must install the latest patches *before* running the AS/U server software. If the patches are not installed, the AS/U server may not start.

If you have ordered a *new* system, with Advanced Server/9000 option 0D1 “Factory Integration,” the AS/U product is already on your system disk, so you can:

- a. Skip the steps pertaining to `swinstall`,
 - b. install the required patch, and
 - c. proceed with installing a primary or backup domain controller using `/opt/asu/lanman/bin/asu_inst`.
2. Log in to your computer as root (superuser).
 3. Check that the `/usr/bin`, `/usr/sbin` and `/sbin` directories are in your PATH using the command: `echo $PATH`.
 4. Ensure that the HP-UX version is 10.20 or later by typing the command: `uname -a`.
 5. Load the software media (such as CDROM) into the appropriate drive.

Installing AS/U
Installing AS/U Software

NOTE

If you are accessing the workstation remotely and you are going to run the X-windows based version of the `swinstall` program, proceed as follows: 1) on your local workstation, type `xhost +remoteservername` to add the remote computer to the xhost database, 2) telnet to the remote, and then on the remote workstation, export the remote display to your local workstation using the command:

```
export DISPLAY=computername:0.0
```

-
6. Type the command:

```
swinstall
```

For assistance on a particular field, press the **F1** key. For more details on the installation process, see the `swinstall` manpage, or refer to *Managing HP-UX Software with SD-UX*.

7. Change the source host name after “Source Host Name,” if necessary. The source host can be a remote machine or the local machine.
8. Click on the **Source Depot Path** to identify the registered depots for the specified host. Select the appropriate source depot path, and activate the **OK** button to return to the Software Selection Window.
9. For new installations, highlight the Advanced Server/9000 software (**J2716AA or J2719AA**) and then choose Mark for Install from the “Actions” menu to choose the product to be installed. Note: if you are *reinstalling* the same version or an earlier version of this product, you need to change the default options within `swinstall` to allow you to overwrite existing software.
10. Choose Install Analysis from the “Actions” menu to begin product installation and open the Install Analysis Window. When the analysis completes, check the log for errors and warnings. All errors must be resolved before continuing the installation.
11. Activate the OK button in the Install Analysis Window when the Status field displays a “Ready” message.
12. Activate the YES button at the Confirmation Window to confirm that you want to install the software. `swinstall` loads the filesets, runs the control scripts for the filesets, and builds the kernel. Estimated time for processing: 8 minutes (more if you are installing multiple applications at once). When the status field indicates “Ready,” a Note Window opens. Activate the OK button on the Note Window. The kernel will be rebuilt and the system will reboot.

13. If an error occurs during the installation, correct the problem and press **reanalyze** to continue. The Advanced Server/9000 will not install if a version of Advanced Server/9000, is already running or if LAN Manager or NetBIOS are currently running.
14. If you want to confirm that the Advanced Server/9000 software was installed correctly, run **swverify**
15. Review the contents of the **swinstall** command log file in **/var/adm/sw/swagent.log**. This file is a log of any errors, warnings, or notes that may have been issued during the installation.

If there are no error or warning messages from the installation process, then you are ready to configure and start the Advanced Server/9000 server as described in the next section titled "Configuring Advanced Server/9000."

If there are error messages in the log file, you should correct the problems indicated in the messages, then install Advanced Server/9000 again. If there are warning messages in the log file, you should determine if the conditions described in the warnings will affect your use of the server. If your answer is yes, then correct the conditions.

If you still have problems getting your Advanced Server/9000 server to run, refer to the "Troubleshooting Installation Problems" in this chapter. If you continue to experience difficulty, then contact your HP Support Representative.

Configuring Advanced Server/9000

After the Advanced Server/9000 product has been loaded onto the system, a configuration script is used to install and configure Advanced Server/9000 as a primary or backup domain controller. The script is interactive and will prompt for the data items described in the “Data Needed during Installation” section at the beginning of this chapter.

The default LAN device for NetBIOS is `lan0`. If ASU must operate with a different LAN device, then NetBIOS must be reconfigured via the `autoconfig` utility before proceeding with ASU configuration. See “Changing Default LAN Designation” later in this chapter.

- **New Installation**

If a previous LAN Manager or AS/U product is not installed on this machine, then refer to either the “Installing a Primary Domain Controller” or “Installing a Backup Domain Controller” section that follows this section.

- **Upgrading from AS/U version A.*.***

To see which version you have, type `asu_ver`. If `asu_ver` shows that you have any release numbered A.*.* (for example, A.03.04), on your current server, then refer first to “Upgrading from AS/U Version A.*.*” in this chapter.

- **Upgrading from LAN Manager 2.2**

LAN Manager 2.2 servers are upgraded automatically during the Advanced Server/9000 configuration process. Stop the LAN Manager 2.2 product (including NetBIOS) and refer to Chapter 3, “Upgrading from LAN Manager 2.2” for further instructions.

NOTE

HP-UX 9.x versions of LAN Manager 2.2 must first be successfully migrated to an HP-UX 10.20 or later version of LAN Manager 2.2 before migrating to Advanced Server/9000. Migration to AS/U is only provided for the HP-UX 10.X versions of LAN Manager 2.2 and LAN Manager/X. Migration scripts are not available for automatically upgrading from the 9.x versions of LAN Manager 2.2 or LAN Manager/X.

- **Migrating from LAN Manager 1.4**

An automatic upgrade process is not available for LAN Manager 1.4. Instead, a migration tool is provided to migrate users, groups, shares, and other configuration data from LAN Manager 1.4 after Advanced Server/9000 is successfully installed and running.

Stop the LAN Manager 1.4 product (including NetBIOS), and proceed with the configuration as if a new ASU installation. Start the ASU server and refer to Chapter 4, "Migrating from LAN Manager 1.4" for more information on the use of the migration tools.

Changing Default LAN Designation

If `lan0` is not the device you wish to use with the Advanced Server/9000, then do the following:

1. Stop the Advanced Server server by typing:

```
net stop server
```

2. Stop the NetBIOS daemon by typing:

```
/opt/lmu/netbios/bin/nbutil -N stop
```

3. To change the LAN card designation, type:

```
/opt/lmu/netbios/bin/autoconfig -l lanN
```

Replace `lanN` with the number of the LAN device for your system (for example `lan1`). It is assumed that `lanN` has been configured with an appropriate IP address, netmask, and subnet address.

4. Restart RFC NetBIOS by typing the following:

```
/opt/lmu/netbios/bin/nbutil -N start
```

5. Restart LAN Manager by typing the following:

```
net start server
```

Installing a Primary Domain Controller

The primary domain controller must be the first Advanced Server/9000 or Windows NT server that is installed in a domain. There can be only one primary domain controller in a domain. If you configure a server as a primary domain controller in a domain that already exists, the result will be two domains with the same name, neither of which will operate properly.

If the primary and backup domain controllers are on different subnets and you have a Windows NT Server, you can use WINS to locate systems easily on remote networks. When using WINS, you will need to configure NetBIOS so that it can contact a WINS server-- refer to the *Advanced Server/9000 Administrator's Guide* for details. If you don't have a Windows NT WINS server, and the primary and backup domain controllers are on different subnets, you will need to use `nbutil` to load the NetBIOS name-to-IP address mappings as described in the *Advanced Server/9000 Administrator's Guide*.

During the installation of a primary domain controller, you are prompted for the server name, server role, domain name, and administrative account password. For information about these items, see the section titled "Data Needed during Installation" earlier in this chapter.

When running `asu_inst`, it will first ask the type of setup you wish to perform: *Express Setup* or *Custom Setup*:

Express Setup - the installation scripts use default settings so installation is quick and easy. You may change these settings after installation completes. The server is installed as a primary domain controller in its own domain.

Custom Setup - this mode allows you to specify the settings at the beginning of installation. If you select this mode, you must specify the server's name, the domain it will participate in, and the role in that domain.

Selecting the Express Setup will set up the server using the defaults. The system name will be used for the server name, the server role will be a Primary Domain Controller, the domain name will be the system name appended with `_dom`, and administrative account password will be *password*. Express setup does not require any user interaction to complete. Selecting Custom Setup will prompt for the server name, server role, domain name, and administrative account password. User

interaction is required for Custom Setup. At the prompt, select 'y' to use Express Setup, 'n' to use Custom Setup. After `asu_inst` has completed, you can use the `joindomain`, `setservername`, and `setdomainname` commands to change the server configuration. See the *Advanced Server/9000 Administrators Guide* for more information on these commands.

To install the Advanced Server/9000 as a primary domain controller:

1. Run the utility to configure Advance Server/9000:
`/opt/asu/lanman/bin/asu_inst`
2. The system begins the installation process which includes incorporating and updating the saved files and adding the server to the protocol stack.

The system displays the following message:

```
Advanced Server for UNIX provides a NETLOGON service which
simplifies the administration of multiple servers. A single
user accounts database can be shared by multiple servers
grouped together into an administrative collection called a
domain. Within a domain, each server has a designated role. A
single server, called the primary domain controller, manages
all changes to the user accounts database and automatically
distributed those changes to other servers, called backup
domain controllers, within the same domain. You may now supply
a server name (the name which this server will be known on the
network), the role that this server will perform in that domain
(primary or backup), and a domain name. Enter the name of the
server or press Enter to select 'uname':
```

3. Enter the name of the server or press ENTER to accept the default name. See the section titled "Data Needed during Installation" earlier in this chapter for information about the server name.

The system displays the following message:

```
Each server must be given a role in a domain. The possible
roles are:
```

```
primary domain controller:
```

```
Administration server. Distributes user accounts information
to backup domain controllers. Validates network logon
requests. There can be only one primary domain controller per
domain.
```

```
backup domain controller:
```

```
Receives user account information from the primary domain
controller. Validates network logon requests and can be
promoted to primary if the primary domain controller is not
accessible.
```

```
Enter role (primary or backup):
```

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Installing a Primary Domain Controller

4. Type `primary` and press ENTER.

The system prompts you for the name of the domain.

5. Enter the name of a domain or press ENTER to accept the default (`uname_dom`).

The system displays the following message and prompt:

```
This server will be the primary controller for the domain.  
An administrative account Administrator will now be created  
for you to manage the domain.
```

```
Enter the password for Administrator:
```

6. Enter a password for the Administrator account. It can be up to 14 characters in length. Re-enter it when prompted.

It is recommended you change the Administrator password at this time. Record this password for future reference.

If you do not enter an Administrator password, the Administrator will not have a password--allowing anyone administrative ability on the server!

7. The system will ask you to confirm your choices. Confirm or make changes when prompted. The system continues the installation process which includes creating a user accounts database, a new access control list database, and a new share list file.

The `asu_inst` script starts the Advanced Server/9000 and sends mail to root which contains a listing of the available resources. If the Advanced Server/9000 does not start, check the error messages and follow the instructions in the section titled "Troubleshooting Installation problems."

When you see the following message, installation of the primary domain controller is complete.

```
* The Advanced Server for UNIX  
Systems is now operational.
```

Installing a Backup Domain Controller

In order to install the Advanced Server/9000 as a backup domain controller, a primary domain controller must be running in the domain.

Verify that the primary domain controller is active on the network and that the administrative account and password exist on the primary domain controller. If the primary and backup domain controllers are on different subnets and you have a Windows NT Server, you can use WINS to locate systems easily on remote networks. When using WINS, you will need to configure NetBIOS so that it can contact a WINS server--refer to the *Advanced Server/9000 Administrator's Guide* for details. If you don't have a Windows NT WINS server, and the primary and backup domain controllers are on different subnets, you will need to use `nbutil` to load the NetBIOS name-to-IP address mappings as described in the *Advanced Server/9000 Administrator's Guide*.

During installation of a backup domain controller, you will be prompted for the server name, server role, domain name, and administrative account password. For information about these items, see "Data Needed during Installation," earlier in this chapter.

When running `asu_inst`, it will first ask the type of setup you wish to perform: *Express Setup* or *Custom Setup*:

Express Setup - the installation scripts use default settings so installation is quick and easy. You may change these settings after installation completes. The server is installed as a primary domain controller in its own domain.

Custom Setup - this mode allows you to specify the settings at the beginning of installation. If you select this mode, you must specify the server's name, the domain it will participate in, and the role in that domain.

Selecting the Express Setup will set up the server using the defaults. The system name will be used for the server name, the server role will be a Primary Domain Controller, the domain name will be the system name appended with `_dom`, and administrative account password will be *password*. Express setup does not require any user interaction to complete. Selecting Custom Setup will prompt for the server name, server role, domain name, and administrative account password. User interaction is required for Custom Setup. At the prompt, select 'y' to use Express Setup, 'n' to use Custom Setup. After `asu_inst` has completed,

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Installing a Backup Domain Controller

you can use the `joindomain`, `setservername`, and `setdomainname` commands to change the server configuration. See the *Advanced Server/9000 Administrators Guide* for more information on these commands.

To install the Advanced Server/9000 as a backup domain controller

1. Run the utility to configure Advance Server/9000:
`/opt/asu/lanman/bin/asu_inst`
2. The system begins the installation process which includes incorporating and updating the saved files and adding the server to the protocol stack.

The system displays the following message:

```
Advanced Server for UNIX provides a NETLOGON service which
simplifies the administration of multiple servers. A single
user accounts database can be shared by multiple servers
grouped together into an administrative collection called a
domain. Within a domain, each server has a designated role. A
single server, called the primary domain controller, manages
all changes to the user accounts database and automatically
distributed those changes to other servers, called backup
domain controllers, within the same domain. You may now supply
a server name (the name which this server will be known on the
network), the role that this server will perform in that domain
(primary or backup), and a domain name.
```

```
Enter the name of the server or press Enter to select 'uname':
```

3. Enter the name of the server or press ENTER to accept the default name.

The system displays the following message:

```
Each server must be given a role in a domain. The possible
roles are:
primary domain controller:
```

```
Administration server. Distributes user accounts information
to backup domain controllers. Validates network logon
requests. There can be only one primary domain controller per
domain.
```

```
backup domain controller:
```

```
Receives user account information from the primary domain
controller. Validates network logon requests and can be
promoted to primary if the primary domain controller is not
accessible.
```

```
Enter role (primary or backup):
```

4. Type **backup** and press ENTER.

The system displays the following message:

This installation will configure the server as a backup domain controller for you. You will be prompted to enter the name of the primary domain controller, and an administrative account name on the primary along with its password. In order for this configuration to complete successfully, the primary domain controller must be running and connected to the network.

Enter the name of the primary domain controller (eg *servername*):

5. Enter the name of the primary domain controller.

The system displays the following message:

Enter the name of an administrative account on <primary domain controller> or press Enter to select 'administrator':

- 6. Enter the name of an administrative account that exists on the primary domain controller and press ENTER.**
- 7. Enter a password for the administrative account for the server (backup domain controller) you are installing. Re-enter it when prompted.**

NOTE

You must correctly enter an administrative account name and password that already exist on the primary domain controller in order to install a backup domain controller successfully.

The system then tries to contact the primary domain controller.

- If the connection to the primary domain controller is successful, you will be prompted to confirm your choices of server role, domain, and primary domain controller.

Confirm that your choices are correct or type **n** to re-enter your choices.

The system then creates the user accounts database, access control list, and share list file. It starts the Advanced Server/9000 and sends mail to root which contains a listing of the available resources.

Also at this time, the primary domain controller begins to replicate the user accounts database to the backup domain controller. This process is done automatically. The time it takes to complete depends on the size of the user accounts database on the primary domain controller.

When you see the following message, installation of the primary domain controller is complete.

* The Advanced Server for UNIX Systems is now operational.

- If the connection to the primary domain controller is unsuccessful, you will be notified that the connection attempt failed. The system displays the following:

```
Do you want to retry or enter new information [y,n]?
```

- If you type **y** and press ENTER to retry your connection attempt, you will be given the opportunity to enter your new choices for the role and primary domain controller.

NOTE

Verify that the primary domain controller is active on the network and that the administrative account and password exist on the primary domain controller.

- If you type **n** and press ENTER or if you continue to be unsuccessful in contacting the primary domain controller, the system displays the following message:

```
This server could not be configured as a backup domain controller at this time. Installation will continue with this server configured as a primary domain controller with a randomly generated domain name.
```

```
After installation is complete and the problems contacting the primary domain controller are resolved, run the command: joindomain, which is located in the directory: /opt/asu/lanman/bin. With this command you can configure the server as a backup controller in any domain or as a primary domain controller.
```

```
This server will be the primary domain controller for the domain. An administrative account Administrator will now be created for you to manage the domain:
```

```
Enter the password for Administrator:
```

It is recommended you change the administrator password at this time. If you chose not to change it, then the default password is *password*. Record this password for future reference. Enter a password for the administrator account. It can be up to 14 characters in length. Re-enter it when prompted.

The system continues the installation process which includes creating a user accounts database, a new access control list database, and a new share list file.

The `asu_inst` script starts the Advanced Server/9000 and sends mail to root which contains a listing of the available resources. If the Advanced Server/9000 does not start, check the error messages and follow the instructions under Troubleshooting Installation problems.

When you see the following message, installation of the backup domain controller is complete.

* The Advanced Server for UNIX Systems is now operational.

The Advanced Server/9000 assigns a randomly-generated domain name which is composed of a name similar to the machine name and a number. After the server is installed as a primary domain controller, you can use the `joindomain` command to change the role of the server to backup and to join the domain of the primary domain controller.

Re-Installing or Removing the Advanced Server/9000

If you need to re-install or remove the Advanced Server/9000, log into the system as root:

1. Stop the server:

```
net stop server
```

2. Stop NetBIOS:

```
/opt/lmu/netbios/bin/nbutil -N stop
```

3. To remove the Advanced Server/9000, run the Advanced Server/9000 utility :

```
/opt/asu/lanman/bin/asu_rmv
```

The `asu_rmv` utility will ask you if you want to save your configuration and data logs. Answering yes will save your Advanced Server/9000 configuration and data logs but remove the Advanced Server/9000 executables. Answering no will remove your Advanced Server/9000 configuration data and executables.

4. Follow the instructions for installing the Advanced Server/9000 described earlier in this chapter.
5. After you re-install, (or update), re-run the Advanced Server/9000 configuration utility:

```
/opt/asu/lanman/bin/asu_inst
```

NOTE

Do not use the HP-UX `swremove` utility unless you want to remove the Advanced Server/9000 product and all files that were installed. Data stored in directories under the Advanced Server/9000 product directories may also be removed.

What To Do Next

After your server software is successfully installed and configured, review the on-line README file and printed release note for additional information about this release of the Advanced Server/9000 product.

If you are migrating from LAN Manager/X, please refer to chapter 3 of this guide for further instructions on using the LAN Manager/X migration tool `menu.sh` to migrate user accounts, group accounts, automatic and manual shares, printer queue shares, and update the `lanman.ini` configuration file.

Also, check the online README file and the printed release notes for the latest migration information.

Starting the Advanced Server/9000

By default, NetBIOS starts at system startup, but you must start the Advanced Server/9000 manually. NetBIOS must be started before starting the Advanced Server:

1. Log into your system as root.
2. To start NetBIOS:

```
/opt/lmu/netbios/bin/nbutil -N start
```
3. To start the Advanced Server:

```
net start server
```

Stopping the Advanced Server/9000

To stop Advanced Server/9000 services and NetBIOS, make sure you stop the services and then NetBIOS:

1. Log into your system as root.
2. To stop the Advanced Server/9000, type:

```
net stop server
```
3. To stop NetBIOS:

```
/opt/lmu/netbios/bin/nbutil -N stop
```

Automatically Starting AS/U

To automatically start Advanced Server/9000 when your system is restarted, you must modify the startup configuration files for both Advanced Server/9000 and the underlying NetBIOS transport.

1. To automatically start Advanced Server/9000, edit the file `/etc/rc.config.d/asu` so that it contains the following entry:

```
ASU_ASU=1
```
2. To automatically start NetBIOS edit the file `/etc/rc.config.d/lmu` so it contains the following entry:

```
LMU_NETBIOS=1
```

Upgrading from AS/U Version A.*.*

This section describes how to upgrade Advanced Server/9000, version A.*.* to version B.*.*.

One of the features of this version of Advanced Server is Windows NT-style printing. This feature means that you can manage Advanced Server print operations in the same way as Windows NT. Advanced Server computers can store print drivers for Windows NT and Windows 95 client computers. Print drivers are downloaded from server to client automatically; client computer users no longer need to load drivers locally.

However, in order to download print drivers on Windows NT client computers, an administrator must associate each printer share with the appropriate print driver(s). Until print drivers are assigned to every print share used by Windows NT client computers, Windows NT clients without these printers already configured will be unable to print. (Other Microsoft network clients are not affected and will continue to print normally.)

If you are upgrading printer shares, you will be prompted during the upgrade procedure to choose whether to enable Windows NT-style printing. If you have a considerable number of Windows NT clients, you may want to postpone enabling Windows NT-style printing until after the system upgrade is complete.

Upgrading Advanced Server occurs automatically when you install Advanced Server, version B.*.* from A.*.*. The `asu_inst` installation script upgrades all of the saved data items and files from the previous Advanced Server installation. This includes groups, users, and access control lists.

To upgrade Advanced Server

1. Log on to the UNIX system as root.

Installing AS/U

Upgrading from AS/U Version A.*.*

NOTE

Before you upgrade Advanced Server, it is strongly recommended that you back up the contents of the **/var/opt/asu/lanman** and **/etc/opt/asu/lanman** directories before you remove Advanced Server.

2. Remove Advanced Server as described in this chapter in “Re-Installing or Removing the Advanced Server/9000.” Be sure to save any data and configuration files that you may want to re-use because the AS/U B.*.* upgrade will modify some of these files in a manner that will prohibit their use if you decide to revert to AS/U version A.*.*.
3. Perform `swinstall` procedure as described in “Installing AS/U Software.”
4. Type the following command and press ENTER:

```
asu_inst
```

5. This request script will prompt you for information necessary to install and configure your Advanced Server/9000.

The following message appears:

```
Configuration files from a previous installation of LAN
Manager for UNIX or AS/U are
present on this computer. This installation can either
upgrade or delete these files.
```

```
Do you want to upgrade these files [y/n]?
```

6. Type `y` and press ENTER.

WARNING

If you type n, all previously-saved Advanced Server files will be deleted, including the user accounts database, access control lists, and the lanman.ini file.

The system displays the following message:

```
Advanced Server has upgraded your printer shares
successfully.
```

```
One of the new features in this release is 'Windows NT-style
Printing.' Among other things, 'Windows NT-style Printing'
gives you the ability to store print drivers for Windows 95
and Windows NT client computers on the server. Print drivers
are downloaded automatically from the server to Windows 95
and Windows NT client computers. These clients then can use
the server's printers without loading drivers manually.
```

However, 'Windows NT-style Printing' requires that the administrator update each printer share with the appropriate print driver(s) before Windows NT and Windows 95 client computers will be able to automatically download the driver for use of a given printer.

Do you want to disable Windows NT-style Printing y/n? [y]

7. Type **y** or **n** and press ENTER.

- If you choose to disable Windows NT-style printing (y), you will have the opportunity to enable it at any time in the future and your Windows NT clients can continue to print normally.

To enable Windows NT-style printing after a system upgrade, set the value of the **DisableUpLevelPrinting** key to 0 in the Advanced Server Registry. Restart the server, and then associate a print driver with each printer share used by Windows NT clients.

- If you allow Windows NT-style printing to be enabled at this time (n), your Windows NT client computers will not be able to print until you associate print drivers with the printer shares used by these client computers.

For more information about Windows NT-style printing, see the *Advanced Server Concepts and Planning Guide*.

When you see the following message, upgrade of the server is complete:

```
The Advanced Server for UNIX Systems is now operational.
```

NOTE

As a result of upgrading Advanced Server, most of the values in your previous **lanman.ini** configuration file are mapped to Advanced Server Registry keywords. Some **lanman.ini** file parameters are not incorporated into the registry and instead are stored in a new **lanman.ini** file. A copy of your previous **lanman.ini** file is saved and renamed **lanman.old**. For more information about the Advanced Server Registry and the lanman.ini file, see Appendixes A and B.

Reverting to a Previous AS/U Version

If you want to revert to a previous version of Advanced Server/9000 (for example to go back to version A.03.04 from B.03.00), perform the following steps (at the HP-UX command prompt):

1. Stop AS/U:

```
net stop server
```

2. Stop NetBIOS:

```
nbutil -N stop
```

3. Remove AS/U from your system by typing at the HP-UX command prompt:

```
asu_rmv
```

The `asu_rmv` program allows you to specify any AS/U *configuration* information you want to save or remove before re-installation.

If you want to completely remove AS/U from your system (including all *configuration* information and user data stored under the AS/U product directories), also run the `swremove` command as follows:

```
swremove -x enforce_dependencies=false ASU
```

4. Remove NetBIOS from your system:

```
swremove -x enforce_dependencies=false -x  
autoreboot=true RFC-NETBIOS
```

5. Run `swinstall` as normal.

If you are continuing to revert to a previous version (and you did not completely remove AS/U from your system earlier using `swremove` as in step 3), you need to do the following steps

- a. Pull down the Options menu.
- b. Select Change Options.
- c. Select **Allow installation of lower version than current.**

This is necessary because the version of AS/U you are installing is earlier than that of the AS/U currently on your system. After these steps, proceed with installation as usual.

NOTE

Before running `asu_inst`, you should now restore the contents of the `/var/opt/asu/lanman` and `/etc/opt/asu/lanman` directories that you saved before the B.*.* upgrade.

Re-Installing a PDC without Saved Domain Database Files

Normally, when you re-install an AS/U primary domain controller, you first save the domain database files during `asu_rmv` and then later restore them during the new installation. All machines and user accounts in the domain are preserved. However, in some cases, domain files may not be available if:

- the domain files are corrupt, not backed up, lost, or
- you desire an entirely new domain database and choose not to save existing domain files.

In these cases, re-installation creates new default domain files, and all knowledge of current backup domain controllers is lost (as are all other user and machine accounts). Existing backup domain controllers now must be “re-joined” to the domain in order to register themselves with the PDC and to refresh their local user account databases.

Use the following procedure to re-install an AS/U primary domain controller without saved domain files:

1. Log in as root and install Advanced Server as a primary domain controller as described earlier in this chapter.
2. Re-join the pre-existing backup domain controllers to the domain by running the `joindomain` command at each of the backup domain controllers. For information about the `joindomain` command, see the *Advanced Server/9000 Administrator's Guide*.

NOTE

The re-installation of the primary domain controller without saved data and configuration files results in the loss of all user accounts and the sharefile. User accounts and shared resources have to be re-created on the newly-installed primary domain controller.

Managing Domains

LAN Manager/X and LAN Manager 2.2 servers should not reside in the same domain as AS/U or Windows NT servers.

WARNING

If a LAN Manager 2.2 server resides in the same domain as an Advanced Server/9000 or Windows NT server, the NT Domain Security Database will be replicated to the LAN Manager 2.2 server thereby corrupting the User Accounts Database on LAN Manager 2.2.

If you are migrating multiple LAN Manager servers in the same domain to AS/U, either migrate all servers at once, or move the AS/U servers to a separate domain during migration. Clients are able to access servers in multiple domains.

AS/U will work as a Primary or Backup Domain Controller in a domain with all AS/U servers.

Advanced Server/9000 can serve as a Backup Domain Controller (BDC) to a Windows NT-based Primary Domain Controller (PDC) in the same domain.

If you install Microsoft Service Pack 4 on Windows NT 3.51 (available from Microsoft), the Advanced Server/9000 can serve as a PDC with NT as the BDC. If Service Pack 4 on NT 3.51 is not installed, full synchronization of the User Accounts Database fails between an AS/U PDC and a Windows NT BDC with an `Invalid access to memory location` error. If Service Pack 4 is not installed, the Windows NT BDC cannot be promoted to a PDC when an AS/U server was the PDC.

Installing AS/U
Managing Domains

2 **Installing Administrative Software**

To administer the Advanced Server/9000 from a Windows 95 client computer, you must install the Windows NT Server Tools package on the client computer. To administer the Advanced Server/9000 from a Windows NT Workstation computer, you must install the Windows NT Administrative Tools package on the workstation.

Installable versions of both administrative program groups are shared automatically in ASTOOLS by the Advanced Server/9000.

This chapter describes how to install these tools on client computers. It includes the following information:

- **Installing Windows NT Server Tools**—describes how to install and configure Windows NT Server Tools on a Windows 95 workstation.
- **Installing Windows NT Administrative Tools**—describes how to install Windows NT Administrative Tools on a Windows NT Workstation computer and how to create icons for the program group.

The Windows NT Server Tools and Windows NT Administrative Tools cannot be used to administer LAN Manager for Unix 2.2 (LM/U) or LAN Manager/X servers.

Installing Windows NT Server Tools

The Windows NT Server Tools program group is used to administer the Advanced Server/9000. It can be installed on the following client computers:

- Microsoft Windows 95

The installation procedure which follows describes how to install Windows NT Server Tools on a Windows client computer. The names of the menu options in Windows for Workgroups screens may vary.

To install Windows NT Server Tools on a Windows client computer

1. From the client workstation, log on to the domain of the Advanced Server/9000 server .
2. Using Network Neighborhood, establish a connection to the ASTOOLS shared resource on the Advanced Server/9000, as follows:
 - a. Select **Windows Explorer**. If your domain is displayed, select it; otherwise, select **Network Neighborhood, Entire Network** then select your domain.
 - b. Select the Advanced Server/9000 server in the domain.
 - c. Select **ASTOOLS**. The **ASTOOLS** share contains the Windows NT Server Tools software. Contents of the **ASTOOLS** share are displayed.
 - d. Select Tools>MapNetworkdrive and assign a drive letter to the path that contains your Advanced Server/9000 servername and **ASTOOLS** share.
3. In the **astools** directory, select **Win95**. The system displays the Windows NT Server Tools program files. The file **srvtools.txt** in the Win95 directory contains information on the Windows NT Server Tools for Windows 95.

Installing Windows NT Administrative Tools

The Windows NT Administrative Tools program group provides administrative capabilities to the Windows NT Workstation computer. It can be installed only on Windows NT Workstation computers.

If using Windows NT Administrative tools on the Windows NT Workstation, ensure that you use the Administrative Tools for Windows NT Workstation version 3.51 or 4.0. Do not install the Windows NT administrative tools for the Windows NT 3.51 or 4.0 releases on a system running Windows NT version 3.50.

To install Windows NT Administrative Tools

1. From a Windows NT Workstation computer, log on to the Advanced Server/9000.
2. Using File Manager, establish a connection to the ASTOOLS shared resource on the Advanced Server/9000, as follows:
 - a. On the Windows NT Workstation computer, select **Disk** from the menu bar.
 - b. Select **Network Connections...** from the Disk menu.
 - c. From the **Shared Directories** pane in the **Connect Network Drive** dialog box, select the server running the Advanced Server/9000.
 - d. Select **ASTOOLS** from the displayed share names. The ASTOOLS share contains the Windows NT Administrative Tools software.
ASTOOLS now is displayed in the **Path:** box with the next available drive letter.
 - e. Click on the **OK** button. The ASTOOLS shared resource now is displayed.
3. In the **astools** directory, click on **winnt.351** or **winnt.40**. The system displays the Windows NT Administrative Tools program files.

4. Scroll to the **setup.bat** program. Choose **Run** from the File menu to execute the **setup.bat** program, or double-click on the **setup.bat** executable. The workstation-based network administrative tools are now installed.

The system displays a message indicating that program icons may be created for the following program items: Server Manager, User Manager for Domains, and User Profile Editor.

5. When the installation process is complete, return to the File Manager and disconnect the connection to the shared resource ASTOOLS, as follows:
 - a. Select **Network Connections...** from the Disk menu.
 - b. In the **Network Drive** dialog box, select the appropriate drive.
 - c. Click on the **OK** button.

Creating Icons for Windows NT Administrative Tools

You can use Program Manager on a Windows NT 3.51 Workstation computer to create program icons for your new Windows NT Administrative Tools program items. The following steps guide you through the basics of creating a program item.

To create a program item in a common program group, you must be logged on as a member of the Administrators or Server Operators group.

To create program icons for Windows NT Administrative Tools

1. Open the group to which you want to add the item (probably the Administrative Tools program group).
2. From the File menu, choose New to display the **New Program Object** dialog box. Then select the **Program Item** option and choose the **OK** button. Or press and hold down ALT while double-clicking in a blank area of the group window.
3. In the **Description** box, type one of the following descriptions which will identify each application:
 - Server Manager
 - User Profile Editor
 - User Manager for Domains.

This optional description becomes the label that appears under the icon in the group window. If you leave this box blank, Program Manager labels the icon for you.

4. In the **Command Line** box, type the name of the program file that corresponds with your entry in the **Description** box, including its path and extension. (You also can use the **Browse** button to display and choose the path of the executable.)

To add Server Manager, type: `srvmgr.exe`

To add User Profile Editor, type: `upedit.exe`

To add User Manager for Domains, type: `usrmgr.exe`

5. Choose the **OK** button.

The dialog box closes and the new program item appears in the group.

You can also specify a working directory, a shortcut key, and whether the application starts as an icon in the Program Item Properties dialog box. For information on how to perform these tasks, see the *Microsoft Windows NT Workstation System Guide*.

3 Upgrading From LAN Manager 2.2

Upgrading From LAN Manager 2.2

In LAN Manager 2.2 Systems, the server role can be configured as primary, backup, member, or standalone. Each of these LAN Manager 2.x server types can be upgraded to either an Advanced Server/9000 primary or backup domain controller.

When a LAN Manager server is upgraded to the Advanced Server/9000, users from the LAN Manager 2.2 environment become accounts in the Advanced Server/9000 domain. The lanman.ini configuration file is configured to support the new Advanced Server/9000 domain; keywords and parameters that no longer are supported are ignored. The share list file is maintained, and the access control lists are upgraded. Print spooler state files are copied to maintain print queues configured in LAN Manager 2.2.

Depending on the configuration of the LAN Manager 2.2 server, there may be additional parameters that will need to be changed in the lanman.ini file following the upgrade procedure. These are described later in this chapter.

Migration to AS/U is only provided for the HP-UX 10.X versions of LAN Manager 2.2 and LAN Manager/X. Migration scripts are not available for automatically upgrading from the 9.x versions of LAN Manager 2.2 or LAN Manager/X. On HP-UX 10.x, ensure that LAN Manager /X or LAN Manager 2.2 has been tested and is operating successfully before migrating to AS/U. If updating or upgrading, ensure that LAN Manager/X or LAN Manager 2.2 and an existing NetBIOS Daemon are not running.

NOTE

LAN Manager 2.2 must be on HP-UX 10.20 or later in order to upgrade to the Advanced Server/9000.

Upgrading a Primary Domain Controller

Upgrading a LAN Manager 2.2 server to an Advanced Server/9000 primary domain controller is done automatically during the installation of the Advanced Server/9000. The installation procedure upgrades all saved data items and files from the LAN Manager 2.2 server including groups, users, and access control lists.

NOTE

LAN Manager 2.2 and NetBIOS must be stopped before you install Advanced Server/9000.

To upgrade a LAN Manager 2.2 server to an Advanced Server/9000 primary domain controller

1. Install the Advanced Server/9000 product files as described in the section Loading Advanced Server/9000 Software in chapter one of this manual.
2. Run the utility to configure Advance Server/9000:
`/opt/asu/lanman/bin/asu_inst`
3. The system begins the installation process which includes incorporating and updating the saved files and adding the server to the protocol stack.

The system displays the following message:

```
Advanced Server for UNIX provides a NETLOGON service which
simplifies the administration of multiple servers. A single
user accounts database can be shared by multiple servers
grouped together into an administrative collection called a
domain. Within a domain, each server has a designated role. A
single server, called the primary domain controller, manages
all changes to the user accounts database and automatically
distributed those changes to other servers, called backup
domain controllers, within the same domain. You may now supply
a server name (the name which this server will be known on the
network), the role that this server will perform in that domain
(primary or backup), and a domain name. Enter the name of the
server or press Enter to select 'uname':
```

4. Enter the name of the server or press ENTER to accept the default name. The default is the server name of the old LAN Manager 2.2 primary domain controller.

Upgrading From LAN Manager 2.2
Upgrading a Primary Domain Controller

For more information about entering a server name, see “Before Installation” in Chapter 1 of this guide.

The system displays the following message:

```
Each server must be given a role in a domain. The possible roles
are: primary domain controller: Administration server.
Distributes user accounts information to backup domain
controllers. Validates network logon requests. There can be
only one primary domain controller per domain. backup domain
controller: Receives user account information from the primary
domain controller. Validates network logon requests and can be
promoted to primary if the primary domain controller is not
accessible. Enter role (primary or backup):
```

5. Type **primary** and press ENTER.

The system prompts you for the name of the domain.

6. Enter the name of the Advanced Server/9000 domain you want this server to join or press ENTER to accept the default, which is the old LAN Manager 2.2 domain. Then, confirm your choice of domain or change it when prompted.

NOTE

Advanced Server/9000 and LAN Manager 2.2 servers currently cannot operate in the same domain. Therefore, do not select the same domain name as the old LAN Manager 2.2 domain unless all LAN Manager servers will be upgraded at the same time.

The system displays the following message and prompt:

```
This server will be the primary controller for the domain. An
administrative account 'Administrator' will now be created for
you to manage the domain. Enter the password for Administrator:
```

7. Enter a password for the Administrator account. Re-enter it when prompted.

For information about entering a password for the Administrator account, see “Data Needed during Installation” in Chapter 1 of this guide.

The system continues the installation process which includes creating a new user accounts database, a new access control list database, and a new share list file with the saved information. The **maxauditlog** and **maxerrlog** configuration parameters are removed from the lanman.ini file because they are not valid in the Advanced Server/9000 environment.

The system starts the Advanced Server/9000 and displays the following message:

```
Users, Groups, and Access Control Entries can be upgraded from  
the LAN Manager 2.x accounts file  
(/var/opt/lanman/datafiles/accounts.lmx). Do you want to  
upgrade now?
```

8. Type **y** and press ENTER.

NOTE

If you type **n**, you need to run the `lmu_upgrade` program to upgrade your files after the server is installed. For information about the `lmu_upgrade` command, see the section in this chapter.

The system upgrades the files and displays the following messages:

```
Group 'USERS' will be mapped to the existing group 'Domain  
Users' Group 'ADMIN' will be mapped to the existing group  
'Domain Admins' Group 'GUESTS' will be mapped to the existing  
group 'Domain Guests' User 'GUEST' will be mapped to the  
existing user 'Guest'
```

The LAN Manager 2.2 `accounts.lmx` file is renamed `accounts.lm2` in the Advanced Server/9000 and is stored in the `/var/opt/lanman/datafiles` directory. The system upgrades individual user accounts and access control lists. This process is not displayed on your monitor, but the changes are logged to the file `/var/opt/asu/lanman/migrate/lmu/migr.log`. It then starts the Advanced Server/9000 and sends mail to root which contains a listing of the available resources.

When you see the following message, the upgrade of the primary domain controller is complete:

```
The Advanced Server for UNIX Systems is now  
operational.
```

Upgrading a Backup Domain Controller

Upgrading a LAN Manager 2.2 backup domain controller to an Advanced Server/9000 backup domain controller is performed in two stages.

First, the Advanced Server/9000 software is installed on the backup domain controller and previously-saved configuration files are upgraded. Following the completion of the software installation, the primary domain controller automatically replicates the user accounts database to the backup domain controller.

When replication is completed and the backup domain controller is able to display the accounts, the upgrade procedure is completed by executing the `lmupgrade` command manually.

To upgrade a LAN Manager 2.2 backup domain controller to an Advanced Server/9000 backup domain controller

1. Install the Advanced Server/9000 product files as described in the section “Loading Advanced Server/9000 Software” in chapter 1 of this manual.
2. Verify that the primary domain controller is active on the network and that the administrative account and password exist on the primary domain controller.

If the primary and backup domain controllers are on different subnets and you have a Windows NT Server, you can use WINS to locate systems easily on remote networks. When using WINS, you will need to configure NetBIOS so that it can contact a WINS server--refer to the *Advanced Server/9000 Administrator's Guide* for details. If you don't have a Windows NT WINS server, and the primary and backup domain controllers are on different subnets, you will need to use **nbutil** to load the NetBIOS name-to-IP address mappings as described in the *Advanced Server/9000 Administrator's Guide*.

3. Run the utility to configure Advance Server/9000:
`/opt/asu/lanman/bin/asu_inst`
4. Log in at the Advanced Server/9000 system console as root.

The system begins the installation process which includes incorporating and updating the saved files and adding the server to the protocol stack.

The system displays the following message:

```
Advanced Server for UNIX provides a NETLOGON service which
simplifies the administration of multiple servers. A single
user accounts database can be shared by multiple servers
grouped together into an administrative collection called a
domain. Within a domain, each server has a designated role. A
single server, called the primary domain controller, manages
all changes to the user accounts database and automatically
distributed those changes to other servers, called backup
domain controllers, within the same domain. You may now supply
a server name (the name which this server will be known on the
network), the role that this server will perform in that domain
(primary or backup), and a domain name. Enter the name of the
server or press Enter to select 'uname':
```

5. Enter the name of the server or just press ENTER to accept the default name. The default is the server name of the old LAN Manager 2.2 backup domain controller.

For more information about entering a server name, see “Data Needed during Installation” in Chapter 1 of this guide.

The system displays the following message:

```
Each server must be given a role in a domain. The possible roles
are: primary domain controller: Administration server.
Distributes user accounts information to backup domain
controllers. Validates network logon requests. There can be
only one primary domain controller per domain. backup domain
controller: Receives user account information from the primary
domain controller. Validates network logon requests and can be
promoted to primary if the primary domain controller is not
accessible. Enter role (primary or backup):
```

6. Type backup and press ENTER.

The system displays the following message:

```
This installation will configure the server as a backup
controller for you. You will be prompted to enter the name of
the primary domain controller, and an administrative account
name on the primary along with its password. In order for this
configuration to complete successfully, the primary domain
controller must be running and connected to the network. Enter
the name of the primary domain controller or press Enter to
select <old-pdc.serve>:
```

7. Enter the name of the Advanced Server/9000 primary domain controller. (The default that is displayed is the old LAN Manager 2.2 primary domain controller.)

The system then prompts you for the name of the administrative account on the primary domain controller:

Upgrading From LAN Manager 2.2
Upgrading a Backup Domain Controller

Enter the name of an administrative account on <primary domain controller> or press Enter to select 'administrator':

8. Enter the name of an administrative account and press ENTER.
9. Enter the password for the administrative account. This password must be the same as the password for the administrative account on the primary domain controller.

The system then contacts the primary domain controller in the Advanced Server/9000 domain and asks you to confirm your choices.

10. Type **y** and press ENTER.

The system then creates an Advanced Server/9000 database and restores any customized print processor scripts, upgrades the share list file, and restores the configuration file. The `maxauditlog` and `maxerrlog` configuration parameters are removed from the `lanman.ini` file because they are not valid in the Advanced Server/9000 environment.

The system starts the Advanced Server/9000. The installation portion of upgrading a LAN Manager 2.2 server to backup domain controller is complete. However, you must perform the steps in the following procedure to upgrade your files.

Completing a LAN Manager 2.2 BDC Upgrade

To complete the upgrade of a LAN Manager 2.2 BDC server to an Advanced Server/9000 BDC server, you must run the `lmu_upgrade` command.

1. Type the following command at the HP-UX system console to determine whether all of the user accounts were replicated from the primary domain controller:

```
net user
```

2. Change to the `/opt/asu/lanman/upgrade_bin` directory and type the following command to update the saved data and configuration files:

```
lmu_upgrade -A
```

The `lmu_upgrade -A` command is used to upgrade LAN Manager 2.2 access control files to the Advanced Server/9000.

For complete information about the `lmupgrade` command, see the section in this chapter.

Checking the Configuration

After completing a LAN Manager 2.2 upgrade to the Advanced Server/9000, you should check the server's **lanman.ini** file and registry to determine whether modifications are needed.

Check the path displayed in the registry file to verify that the logon scripts path is correct. This path uses as its base the **/var/opt/lanman/shares/asu** directory and will display in the scripts keyword as **repl/import/scripts** or **repl/export/scripts**. If the role of the server was changed during the upgrade or the server has been changed from an import computer to export server, this path will need to be changed.

Check the parameters in the [replicator] section to verify whether the `replicate`, `exportlist`, (`importlist`), and `exportpath` (`importpath`) keywords are valid.

LAN Manager 2.2 servers automatically enable the Directory Replicator service. The Advanced Server/9000 requires the administrator to assign a special account to this service. The Advanced Server/9000 does not start the Directory Replicator service automatically. The account must be created and assigned to the Directory Replicator service manually.

For more information about the Directory Replicator service, see the *Advanced Server/9000 Concepts and Planning Guide* and the *Advanced Server/9000 Administrator's Guide*.

Upgrading a Member Server

The role of member server is not supported in an Advanced Server/9000 domain. It is recommended that a LAN Manager 2.2 member server be upgraded to an Advanced Server/9000 backup domain controller.

Use the procedure described earlier in Upgrading a LAN Manager 2.2 Backup Domain Controller to an Advanced Server/9000 Backup Domain Controller to perform this task.

It will be necessary to execute the `lmu_upgrade` command with the `-A` option to complete the upgrade. This procedure will upgrade the access control list for the resources which were available on the member server. The `lmu_upgrade` command must be executed after the user accounts database has been replicated to the new backup domain controller.

Upgrading a Standalone Server

The role of a standalone server is not supported in an Advanced Server/9000 domain. It is recommended that a LAN Manager 2.2 standalone server initially be upgraded to an Advanced Server/9000 primary domain controller.

Use the procedure described earlier in Upgrading a LAN Manager 2.2 Server to an Advanced Server/9000 Primary Domain Controller to perform this task.

Changing the role of the LAN Manager 2.2 server will result in the following:

- The SERVERS group will be created on the Advanced Server/9000 and the LAN Manager 2.2 machine account will be added as a member of that group.
- The Advanced Server/9000 primary domain controller will replicate the user accounts database to the LAN Manager 2.2 backup domain controller.

LAN Manager 2.2 Coexistence

During the Advanced Server upgrade/installation process several changes are made to the LAN Manager 2.2 configuration to allow both products to coexist on the same machine. Only one of the products may be running at any given time, but the products should not interfere with each other. The changes are as follows:

- The LAN Manager 2.2 `net` command is renamed to `net22` to avoid conflict with the Advanced Server/9000 `net` command.
- The LAN Manager 2.2 `lmx_rmv` command is patched to prevent components common to both Advanced Server/9000 and LAN Manager 2.2 from being deleted.
- HP-UX user accounts created by LAN Manager 2.2 are marked as upgraded in their `/etc/passwd` comment field to prevent deletion during LAN Manager 2.2 product removal

These changes allow Advanced Server/9000 to be installed, configured, and removed from a LAN Manager 2.2 system without affecting LAN Manager 2.2 operation. Later, when coexistence is no longer needed, LAN Manager 2.2 can be removed without affecting the Advanced Server/9000 installation.

lmu_upgrade

Purpose

The `lmu_upgrade` command is used to upgrade LAN Manager for HP-UX data files to the Advanced Server/9000 for HP-UX .

Syntax

```
lmu_upgrade [-i file] [-YUGAynv]
```

where

-i file

- Identifies the input file. If there is no entry, the system uses the following file: `/var/opt/asu/lanman/datafiles/accounts.lm2`.

-Y

- Specifies that all users, groups, and access control entries should be upgraded and no routine questions are to be asked during the upgrade procedure. This option cannot be used with any other option except the `-i` and `-v` options.

-U -G -A

- Specify that users (`-U`), groups (`-G`), and access control entries (`-A`) are to be upgraded. Any combination of these flags is valid. If multiple flags are specified, groups are updated first, followed by users, and then access control entries.

For example, if only users are specified, it is important that the groups were updated previously. Otherwise, group memberships for each user will not be preserved because the groups will not exist.

The same is true for access control entries. If a group, user, or access privilege already exists, the `lmu_upgrade` command will overwrite the existing information for that item with information from the input file.

If the server that being upgraded is a backup domain controller, only access control entries can be upgraded and therefore only the `-A` option can be specified.

lmu_upgrade

Before upgrading each user, group, or access control entry, the `lmu_upgrade` command prompts you for the name of the object to be upgraded and asks you if you want to upgrade the object. You can reply `y` to upgrade or `n` to skip the object. If you skip an object, any subsequent objects that are dependent on it may not upgrade correctly. For example, membership in a skipped group or an access control entry may not be upgraded correctly when a user has been skipped.

-y

- Used in conjunction with the `-U`, `-G`, and `-A` options, this option specifies that each upgrade prompt will be automatically answered as `y`. This option provides a visible log of upgrade activity.

-n

- Used in conjunction with the `-U`, `-G`, and `-A` options, this option specifies that each upgrade prompt automatically answers as `n`. This option provides a visible log of what has been upgraded. No changes are made to the Advanced Server/9000 if this option is used.

-v

- Specifies verbose output. Additional information about the upgrading of users, groups, and access control entries is displayed.

Comments

The `lmu_upgrade` command is used to upgrade LAN Manager for HP-UX data files to the Advanced Server. You can upgrade data files during installation of an Advanced Server/9000 or any time after installation.

The role of the LAN Manager user ADMIN is performed by Administrator in the Advanced Server. All access control entries for ADMIN will be upgraded to ADMIN (if that user is upgraded) and also upgraded to Administrator.

The GUEST privilege is updated as membership in the group Domain Guests.

LAN Manager privileges do not exist in the Advanced Server. Rather, user access is granted through membership in appropriate groups. Admin privilege is upgraded as membership in the Administrators local group.

Examples

- To upgrade all users, groups, and access control entries, type:

```
lmu_upgrade -Y
```

Does not prompt for individual items and display minimal progress information.

- To upgrade all users, groups, and access control entries, type:

```
lmu_upgrade -GUA
```

Prompts for each item individually.

- To upgrade all users and groups, type:

```
lmu_upgrade -GUy
```

Does not prompt for individual items; displays progress information.

- To display the names of all access control entries that would have been upgraded, type:

```
lmu_upgrade -An
```

Does not make any changes.

Upgrading From LAN Manager 2.2
Imu_upgrade

4 Migrating from LAN Manager/X

You can use a migration tool called `menu.sh` to migrate user accounts, group accounts, automatic and manual shares, printer queue shares, and update the `lanman.ini` configuration file. The tool consists of a

Migrating from LAN Manager/X

menu-based interface that executes scripts to complete migration of each item. Make sure you review the following sections before you use the migration tool.

Refer to the end of this chapter for a list of the Advanced Server/9000 new features and some of the main differences between LAN Manager/X 1.4 and Advanced Server/9000.

Before Migrating to Advanced Server/9000

Before Migrating from LAN Manager/X to the Advanced Server/9000:

- Keep LAN Manager 1.4 files in place while migrating. If you need to remove LAN Manager 1.4 before you install Advanced Server/9000, save the server profile and configuration files:

`/etc/opt/lmx/profiles/setup.pro /etc/opt/lmx/lanmanx.ini.`

- If LAN Manager 1.4 server software is to be used after migration, understand the coexistence issues.
- Stop LAN Manager 1.4 and the LAN Manager 1.4 NetBIOS.
- Install the Advanced Server/9000 product.
- Decide what you want to migrate and do the preparation work as required.

Installing Advanced Server/9000

For information on installing Advanced Server/9000, refer to chapter 1 of this guide.

Co-existence of the LAN Manager 1.x and Advanced Server/9000 Software

Before you migrate, review the following paragraphs which outline co-existence issues.

Before Installing

Disable the autostart feature of LAN Manager 1.x:

1. Edit the file:
`/etc/rc.config.d/lmx`
2. Set `LMX=0` to disable autostart.

Co-existence of LAN Manager 1.x and Advanced Server/9000

If you choose to keep both products on your system at the same time, be aware of the following:

Both versions can be installed on one system, but only one version can be running. Make sure you shutdown one version, including NetBIOS, before starting the other version.

Advanced Server/9000 does not contain on-line manual pages. If you type **man net**, information about LAN Manager 1.x is displayed. For Advanced Server/9000, use the **net help** command.

Alternate Using LAN Manager 1.x and Advanced Server/9000

If you alternate usage between LAN Manager version 1.x and Advanced Server/9000, make sure that you are using the proper **net** command version. You may wish to establish symbolic links from `/usr/bin/net` to the appropriate product executable.

- The LAN Manager version 1.x product installs its net command into the file `/opt/lmx/lanman/bin/net` and creates a symbolic link from `/usr/bin/net` to `/opt/lmx/lanman/bin/net`.

- The Advanced Server/9000 product installs its net command into the file `/opt/asu/lanman/bin/net` and establishes a symbolic link from `/usr/bin/net` to `/opt/asu/lanman/bin/net`.

When using LAN Manager 1.x:

```
ln -s /opt/lmx/lanman/bin/net /usr/bin/net
```

When using Advanced Server/9000:

```
ln -s /opt/asu/lanman/bin/net /usr/bin/net
```

The following procedures describe how to alternate starting LAN Manager 1.x and Advanced Server/9000.

To Restart LAN Manager 1.x After Running Advanced Server/9000:

1. Log into the system as root.
2. Stop the Advanced Server/9000 server if running:


```
/opt/asu/lanman/bin/net stop server
```
3. To stop the NetBIOS daemon:


```
/opt/lmu/netbios/bin/nbutil -N stop
```
4. Verify that the netdemon process is no longer running. Type:


```
ps -ef | grep netdemon
```

If a netdemon process exists, you must explicitly kill that process:

```
kill -9 xxxx
```

where xxxx is the pid of the netdemon process.
5. Start the LAN Manager 1.x server. Type:


```
/opt/lmx/lanman/bin/net start server
```

To Restart Advanced Server/9000 After Running 1.x:

1. Log into the system as root.
2. Stop the LAN Manager 1.x server if running.


```
/opt/lmx/lanman/bin/net stop server
```

Migrating from LAN Manager/X

Co-existence of the LAN Manager 1.x and Advanced Server/9000 Software

3. Stop the LAN Manager 1.x NetBIOS daemon:

```
ps -ef |grep NetBIOS_Daemon  
kill -9 xxxx
```

Where xxxx is the pid of the NetBIOS_Daemon process.

4. Start RFC NetBIOS:

```
/opt/lmu/netbios/bin/nbutil -N start
```

5. Start the Advanced Server/9000 server:

```
/opt/asu/lanman/bin/net start server
```

Prepare for Migration

Once you have determined what you want to migrate, review the following paragraphs. Some files need to be copied and/or edited before migrating. You may also need to modify passwords after migrating.

User Accounts

Before migrating user accounts, copy the **/etc/passwd** file to the **/tmp/mg/passwd** file. Users defined in this file will be entered as Advanced Server/9000 users in the Advanced Server/9000 security database. Edit the file to contain only users you want as users in the Advanced Server/9000 security database. Advanced Server/9000 will only accept HP-UX users with uids greater than 100. The migration process will not impact an user's HP-UX account.

Encrypted passwords cannot be migrated. When the user accounts are migrated, the password is set to the user name. The account is set to inactive by default. It is recommended you use the default, then require users to change passwords before activating the accounts.

If you are maintaining full names in **/etc/passwd** and want to migrate these names to Advanced Server/9000, make sure all users have valid full names. To insert the user full name into the Advanced Server/9000 user accounts, you must include the full name for each user in the beginning of the comment field in **/tmp/mg/passwd**. The comment field will be read up to the first comma when extracting the full name. For example:

```
johns:passwd:202:99:John Smith, Bld 43,X2222:/home/johns:bin/sh
```

When you run the migration tool, you are asked whether or not user full names have been included in the **/tmp/mg/passwd** file.

After migration: Require that users change their passwords (which have been defaulted to user name) before making the accounts active.

Group Accounts

LAN Manager 1.x provides user-level security using the `/etc/logingroup` feature of HP-UX which allows a user to be a member of multiple groups, and allows access to files and directories that belong to different groups.

If you are not using the `/etc/logingroup` feature, you do not need to migrate group accounts.

To migrate group accounts copy the `/etc/logingroup` file to the `/tmp/mg/logingroup` file. HP-UX groups defined in `/tmp/mg/logingroup` will be entered as Advanced Server/9000 groups. Delete any unwanted user and group names from `/tmp/mg/logingroup`.

With Advanced Server/9000, user and group names must be unique. If you want to migrate groups, make group and user names unique by editing the group names in the `/tmp/mg/logingroup` file.

Automatically Shared Directories

In LAN Manager 1.4, home directories are shared automatically as a result of having an HP-UX account. Advanced Server/9000 does not have an autoshare feature. To allow users to access their HP-UX files in their home directories through Advanced Server/9000, the migration tool provides two options:

- Option one provides transparent autoshare migration for end users by creating one share for each home directory.
- Option two creates one share named `uxusers` (which is mapped to the HP-UX directory `/home`) that is used for all users. Only home directories under HP-UX directory `/home` are migrated.

After migration, end users can access their home directories one level below the share. For example:

```
net use h: /home
h: cd bob
```

NOTE

For large numbers of users (more than 50) it is strongly recommended you use option two, for ease of maintenance and better performance.

Passwords on shares are not migrated because share-level security is not supported under Advanced Server/9000.

For each home directory, the Advanced Server/9000 user and group that correspond to the HP-UX owner and group name of the home directory is given full control access permissions.

When migrating automatically shared directories and home directories, the migration tool `menu.sh` queries you before adding a group ACL to the top directory of a share.

HP-UX 10.0x Migrating Home Directories

If you upgraded LAN Manager 1.x from 9.x to 10.x, home directories for users may exist both in `/users` (HP-UX 9.x location) and in `/home` (HP-UX 10.x location). When you migrate to Advanced Server/9000, the migration tool for automatically shared directories, option 2, migrates home directories in `/home` to one share named `uxusers`. If you also want to migrate home directories in `/users` to `/uxusers` or to another share for example, `/lmusers`, you can copy the script, edit the copy, and run the modified script to migrate these home directories:

1. Log into your system as root and change directories:

```
cd /opt/asu/lanman/migrate/lmx
```
2. Make a copy of `autoshrs2.awk`, for example, named: `autoshrsu.awk`.
3. Use an editor to open `autoshrsu.awk`.
4. Search for the entry:

```
homeroot="/home"
```
5. Change the entry to:

```
homeroot="/users"
```
6. Do a global search for the item `uxusers` and change it to something else, for example, `lmusers`
7. Save the **`autoshrsu.awk`** file.
8. After completing the LAN Manager 1.x to Advanced Server/9000 migration (see the section, Running the Migration Tool), run your modified `autoshrsu.awk` script.

When migrating automatically shared directories and home directories, the migration tool `menu.sh` queries you before adding a group ACL to the top directory of a share.

Migrating from LAN Manager/X
Prepare for Migration

Manually Shared Directories

Shared resources are saved in a profile on LAN Manager 1.x. To migrate this feature, make sure the LAN Manager 1.x profile file exists on the system you are migrating.

```
/etc/opt/lmx/profiles/setup.pro
```

The migration tool uses this profile information to update the Advanced Server/9000 configuration database. The migration tool prompts you for the file name in case you have saved your profile in a name other than the default.

Passwords on shares are not migrated. Share-level security is not supported in Advanced Server/9000.

For each share directory, the Advanced Server/9000 user and group that correspond to the HP-UX owner and group name of the share directory is given full control access permissions.

Since the `-case` parameter is not available with `net share` in Advanced Server/9000, HP-UX files and directories that have names in uppercase cannot be accessed by PC clients through shares in Advanced Server/9000. Users can use symbolic links to reference uppercase filenames or convert them into lowercase before they set up shares. Advanced Server/9000 provides an unsupported utility:

```
/opt/asu/lanman/bin/cdrutil
```

which can be used to automatically create symbolic links for files on CD-ROM.

The default HP-UX owner/group names used by a share-level LAN Manager/X server for manual share files are different from those used by AS/U. For AS/U to properly access these files, the HP-UX owner/group names of these files must be changed to the AS/U defaults. The migration tool generates two shell scripts to assist in changing the HP-UX owner/groups when share-level manual shares are migrated:

```
/tmp/mg/do_change_owner_group  
/tmp/mg/undo_change_owner_group
```

After the migration tool completes, review and edit the `do_change_owner_group` shell script as needed. Run the `do_change_owner_group` script to execute the changes. An `undo_change_owner_group` script is provided to back out the owner/group changes if needed.

LAN Manager/X and LAN Manager 2.2 servers do not recognize trust relationships. See “Servers Running Other Network Systems” in chapter 2 of the *Concepts and Planning Guide* for more information.

AS/U uses group memberships to give capabilities to users, which differs from LAN Manager which used permissions to give capabilities to users. See the *Advanced Server/9000 Concepts and Planning Guide* and *Advanced Server/9000 Administrator's Guide* for more information.

Shared Printer Queues

To migrate shared printer queues, the LAN Manager 1.x `/etc/opt/lmx/profiles/setup.pro` file must be on the system you are migrating.

Passwords associated with the share for a shared printer queue are not migrated -- share-level security is not supported in Advanced Server/9000.

After migrating: If you use scripts to print to LAN Manager 1.x printer queues, use the `net share` command to review parameter changes for Advanced Server/9000.

lanman.ini Parameters

Some parameters in the `lanman.ini` configuration file have changed from LAN Manager 1.x to Advanced Server/9000:

- Pathname: The pathname of the configuration file is:
`/etc/opt/lmx/lanmanx.ini` for LAN Manager 1.x
`/etc/opt/asu/lanman/lanman.ini` for Advanced Server/9000
- Parameters that are modified include: `autodisconnect`, `erroralert`, `interlocking`, `logonalert`, `maxauditlog`, `maxerrorlog`, `maxopens`, and `srvannounce`.
- Parameters that are migrated without change: `accessalert`, `computername`, `maxjobs`, `maxprinters`, `maxqueues`, `maxruns`, `maxsessions`, `runpath`, and `srvhidden`.
- Parameters that are not supported in Advanced Server/9000: `auditing`, `security`, `resauditing`

Migrating from LAN Manager/X

Prepare for Migration

For more information on configuration parameters, see Appendix B, *Server Configuration in the Advanced Server/9000 Administrator's Guide*.

Before migration, the tool saves a back up of the file **lanman.ini** in:
/etc/opt/lmu/lanman/lanman.datetime

Run the Migration Tool

Run Migration Tool on HP-UX 10.20 or Later

To use the migration tool:

1. Log into the system as `root`
2. Make sure NetBIOS has been started:
`/opt/lmu/netbios/bin/nbutil -N start`
3. Make sure the Advanced Server/9000 server has been started:
`/opt/asu/lanman/bin/net start server`
4. Run the migration tool:
`cd /opt/asu/lanman/migrate/lmx`
`./menu.sh`

The following screen is displayed:

```
*****
* * Migration Tool - LAN Manager 1.x to Advanced Server/9000 *
* *
*****
1) Migrate from LAN Manager 1.x to Advanced Server/9000
2) Undo the migration
3) Exit
Please make a selection by number:
```

5. If you select 1 to migrate you are prompted for each feature you want to migrate. This example shows a complete migration.

Migrating from LAN Manager/X
Run the Migration Tool

```
Migrate User Accounts (y or n): y
Migrated accounts should be inactive (y or n): y
The full name of each user is provided in /tmp/mg/passwd
and wish to be inserted in the user account (y or n): y
Migrate Group Accounts (y or n): y
Migrate Automatic Shares (y or n): y
Option 1: Create one share for each user
Option 2: Create one share for all users
Please make a selection by number: 2
Migrate Manual Shares (y or n): y
Enter pathname for server profile if it is not
/etc/opt/lmx/profiles/setup.pro:
Migrate Printer Queue Shares (y or n): y
Migrate the Configuration in lanmanx.ini (y or n): y
```

6. After you answer the prompts, your selections are re-displayed as shown in the following example. To proceed with migration, enter y at the Confirm (y or n): prompt. If you enter n for no, you can start over, or exit the migration tool.

```
Migrate User Accounts (y or n): y
Migrated user accounts will be inactive
Migrated user accounts will have the user fullname inserted
Migrate Group Accounts (y or n): y
Migrate Automatic Shares (y or n): y
Option 2 Migrate Manual Shares (y or n): y
Server profile: /etc/opt/lmx/profiles/setup.pro
Migrate Printer Queue Shares (y or n): y
Migrate the Configuration in lanmanx.ini (y or n): y
Confirm (y or n): y
```

7. You can check if the migration was successful by reviewing the log files indicated on the screen which contains information similar to the following:

```
Migrating User Accounts.....DONE
Migrating Group Accounts.....DONE
Migrating Automatic Shares.....
ERROR occurred, check logfile: /tmp/mg/mgautoshares.log
Migrating Manual Shares.....
ERROR occurred, check logfile: /tmp/mg/mgmanushares.log

Migrating Printer Queue Shares.....
ERROR occurred, check logfile: /tmp/mg/mgprntshares.log
net stop server /y
The NETLOGON service was successfully stopped.
The SERVER service is stopping.....
The SERVER service was successfully stopped.

Migrating the Configuration in lanmanx.ini.....DONE
net start server
The SERVER service is starting.....
The SERVER service was started successfully.
***** REMINDER ***** REMINDER ***** REMINDER *****

Migrated users listed in /tmp/mg/mgusers.r are having
their passwords the same as the user name.
Ask the owner of each account to provide a password.
*****
```

8. After you have completed migration, go to the section titled “After Migration” later in this chapter.

Migration Scripts

The migration tool `menu.sh` can be used to migrate user accounts, group accounts, automatic and manual shares, printer queue shares, and update the configuration file. If you choose to selectively migrate these items, you can use the `menu.sh` program, or the individual scripts which are listed below.

Make sure you have read the applicable information under the section, Prepare for Migration, for the items you want to migrate, then, migrate items in the following order. You must be logged in as root to run the scripts:

1. User accounts: `users.awk`
2. Group accounts: `groups.awk`
3. Automatic shares:
 - For option 1, create one share for each autoshare use: `autoshrs1.awk`.
 - For option 2, create one share for all autoshares, use: `autoshrs2.awk`.
4. Manual shares: `manushrs.awk`
5. Other items:
 - Print shares: `prntshrs.awk`
 - **lanman.ini** configuration items: `config.awk`
6. When you have completed migration, review the next section, After Migration.

After Migration

After you have completed migrating items using the menu-driven utility, or the scripts:

1. Check the screen and log files to assure migration completed successfully.
2. Make sure you or your users change passwords (if required) for shares, and user accounts.
3. Review migrated shares for correct access permissions.

You may want to review the changed features as highlighted in Chapter 2 of this guide, then refer to the *Advanced Server/9000 Administrator's Guide* for more information on new commands.

Problems With Migration

Check the log files and displays to assure migration was successful.

Note you have a back up of the **lanman.ini** configuration file in:

/etc/opt/lmu/lanman/lanman.datetime

If you have problems with an incomplete migration:

- If only a small number of users and shares failed to migrate, you can examine the log file to determine the problem. Then, execute the net commands manually to complete the migration.
- Or, you can use the migration undo function to delete shares and users, examine the log files and preparation work described earlier, fix the problems you find, then re-run the migration tool.

New Features and Services with Advanced Server/9000

Advanced Server/9000 represents a significant upgrade from LAN Manager version 1.x with functionality changes that affect users, groups, access permissions, printer management, configuration, and services. Advanced Server/9000 seeks to provide a file and print server solution that is fully compatible with Microsoft NT server while leveraging the strengths of HP-UX. New features introduced with Advanced Server/9000 include:

- Support for NT domains. Administrative groupings of servers and clients, called “domains”, make it easier to manage large or diverse networks. Trusted domains allow large configurations with many domains to be managed effectively.
- NT Accounts database. Advanced Server/9000 maintains a database of users, groups, and access permissions that is separate from the HP-UX user database. This allows full NT user-level security, including user groups, logon validation, and a domain-wide replicated accounts database.
- NT Access control lists. Access permissions can be defined per user for each shared resource. Provides additional flexibility and greater precision when controlling many resources across many users with different access requirements.
- Remote Administration from the latest Microsoft workstation clients. Advanced Server/9000 provides a complete set of tools that enable a Windows NT or Windows 95 client to administer a remote Advanced Server/9000 server.
- File Replication Service. File replication allows an identical, up-to-date set of directories and files to be maintained on selected servers.
- Alert Service. Messages can be arranged to be sent to selected users upon detection of defined server error conditions or security violations.
- Operator privileges. Users can be assigned permission to perform certain administrator tasks such as printer queue or user accounts management without allowing full administrator capabilities.

- **Expanded auditing.** A variety of server activities including network logons, file access, and security changes can be logged into an audit file.
- **Logon scripts.** Logon scripts can be specified to run when a user logs on to the network. Scripts can be tailored for the requirements of each user.
- **Home directories.** Each user can be assigned a directory on the server for file storage.
- **Restricted logon hours.** Administrators can control the days and times a user can access server resources.
- **Password management facilities.** Administrators can specify password min/max length, time limits, and re-use parameters when tailoring password policies.
- **Password encryption.** User passwords are scrambled for secure passage over the network.
- **Valid workstations.** Users can be restricted to certain workstations when logging on to the network.
- **Client HP-UX utilities.** A set of client programs to allow DOS-based users to list, rename, and change access permissions of HP-UX files and subdirectories that are not directly accessible to clients are provided. These utilities are not supported from NT workstations.

Changes from LAN Manager/X to Advanced Server/9000

This section describes LAN Manager Version 1.x functionality that is implemented differently or not supported in Advanced Server/9000.

Administering the Server

- The xlmadmin utility used to administer local and remote servers is not available with Advanced Server/9000. The Advanced Server/9000 server can be administered from NT workstations using the supplied server tools or from the client or server using net commands. Unlike LAN Manager 1.x, Advanced Server/9000 does not require root access to use net commands except: net start/stop server. Many of the net commands require ADMINISTRATOR capabilities or one of the OPERATOR capabilities. See the section on “Managing Users, Groups, and Security Policies” in the *Advanced Server/9000 Administrator's Guide* for more information.
- Automatic shares (default shares based on each user's HP-UX home directory) are not available in Advanced Server/9000. All shares must be explicitly created by an administrator.
- The net share command does not support the -case option. Use symbolic links to reference uppercase filenames.
- The LAN Manager 1.x net save and net load commands are not supported in Advanced Server/9000.

LAN Manager 1.x has man pages: man net. For on-line help in Advanced Server/9000 execute the command: net help.

Security

- LAN Manager 1.x utilized HP-UX file permissions to govern access to resources. In Advanced Server/9000, NT-style access permissions become the primary method for controlling access to resources. HP-UX file permissions are still observed in Advanced Server/9000, but migration to the NT-style access permissions model offers many advantages and should be used instead.

Changes from LAN Manager/X to Advanced Server/9000

There are significant differences in how Advanced Server/9000 access permissions and HP-UX file permissions are managed. In particular, access permissions assigned to a file directory also applies to all subdirectories and files, if no other access permissions exist for them. Thus, access permissions should first be assigned to top-level directories, then to lower-level directories, and lastly to files (only if necessary). A large number of access permissions can be difficult to manage, and can affect performance.

- File interlocking: LAN Manager version 1.x has four file locking modes: yes, no, readonly, and exclusive. Advanced Server/9000 has two locking modes: yes and no.
- User names and passwords in version 1.x were the same in LAN Manager and HP-UX. In Advanced Server/9000, they can be different.
- Advanced Server/9000 uses the HP-UX groupid differently than version 1.x. You can no longer use HP-UX groups by default to manage file access permissions for Advanced Server/9000 users. AS/U honors the HP-UX setgid bit on a file or directory's parent directory when the keyword `[hpparms]keepunixgroups` is set to `yes`. This allows a group of users to access files and directories based on group memberships. Refer to the appendix on the `lanman.ini` file in the *Advanced Server/9000 Administrator's Guide* for details.

Changes to net Commands

In Advanced Server/9000, there are some minor syntax changes that apply to all `net` commands:

- Option parameters are specified using a forward-slash (/) instead of the dash (-) used in version 1.x.
- Directory path parameters begin with the drive letter prefix: `c:`, but otherwise adhere to the UNIX pathname syntax with forward slashes.

Example on HP-UX 10.x systems:

```
net share newshare=c:/home/xyz
```

The drive letter prefix was not required in version 1.x.

- Computername parameters must begin with a double backslash (\%). Version 1.x accepted either a double forward-slash (//) or a double backslash (\%).

Changes to the net commands from LAN Manager/X to Advanced Server/9000 are shown in the following table.

LAN Manager/X Net Commands	Advanced Server/9000 Changes
net admin	The MS-DOS command shell is not supported (-dos). The [username: [password]] parameters are not supported. The username and password are set by the net logon command.
net audit	Not available.
net autostart	Not available. Administrators must manually modify the appropriate start-up file if they wish to automatically start Advanced Server/9000 upon system start-up.
net config	unchanged
net device	unchanged
net error	Not available. Use the elfread command to view system event logs. Refer to Appendix C: HP-UX System Commands in the Administrator's Guide.
net file	unchanged
net help	The [parameter] parameter is not supported. Use the /options parameter to obtain further information on available options and parameters.
net iniconfig	Not available. Use the srvconfig utility. Refer to chapter 1, "Net Command," in the <i>Advanced Server/9000 Administrator's Guide</i> for more information.

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LAN Manager/X Net Commands	Advanced Server/9000 Changes
net load	Not available. The current set of shared resources is preserved between Advanced Server/9000 invocations. There are no provisions for maintaining different share profiles as in LAN Manager 1.x.
net password	Password restrictions are different. This command is significantly different in Advanced Server/9000.
net print	The [-parms] parameter is not supported. Use the /parms:types=" " command.
net save	Not available. The current set of shared resources is preserved between Advanced Server/9000 invocations.
net send	Text files cannot be sent using the = parameter. The message must fit on the command line.
net share	The [-case] parameter is not available.
net start server	The [-parameters:value] parameter is not available. Use the srvconfig command to display or change keywords in the server's lanman.ini file.
net statistics	unchanged
net status	unchanged
net stop server	unchanged
net user	The [-homedir:path] parameter is not applicable. The [-remark:text] parameter is not applicable. This command is significantly different in Advanced Server/9000.
net view	The [username:[password]] parameters are not supported.

New net Commands in Advanced Server/9000

The new net commands for Advanced Server/9000 are shown in table 2. For more information about net commands in Advanced Server/9000, see the *Advanced Server/9000 Administrator's Guide*.

New net Commands	Description
net access	Displays or modifies resource permissions and audit options on servers with user-level security.
net accounts	Displays or sets the role of servers in a domain and displays or modifies password and logon requirements for the user accounts on a server.
net continue	Reactivates suspended services when entered at a server, and reactivates paused shared printers when entered at a client.
net group	Adds, displays, or modifies groups on servers (global groups only)
net helpmsg	Provides help for a Advanced Server/9000 error message.
net logoff	Logs off a username from the network.
net logon	Logs on a username to Advanced Server/9000 and sets the username and password for the user's client.
net pause	Suspends services or printers at a server
net start alerter	Starts the Alerter service which sends alert messages.
net start netlogon	Starts the Netlogon service which verifies logon requests and controls replication of the user accounts database on a domain-wide basis.
net time	Synchronizes the client's clock with that of a server or domain, or displays the time for a server or domain.
net version	Displays the version of the Advanced Server/9000 software currently running.

File Interlocking

The Advanced Server/9000 server supports shared file access with other servers running on the same HP-UX system when file interlocking is enabled. File interlocking will propagate client file range locks to HP-UX

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Changes from LAN Manager/X to Advanced Server/9000

file system range locks. If other servers also respect HP-UX file range locks then files can be safely accessed by multiple servers. Advanced Server/9000 does not support the extended interlocking options that LAN Manager 1.x provides to support PacerShare servers.

LAN Manager 1.x has the following lanmanx.ini entry:

```
[ server ] interlock=yes|no|readonly|exclusive (default is no)
```

Advanced Server/9000 replaces LAN Manager 1.x's lanmanx.ini entry with the **UseUnixLocks** registry value in the AdvancedServer\FileServiceParameters key name. The **UseUnixLocks** registry value specifies whether record locks created by clients are reflected in the UNIX file system. The default is 0 (locks are not reflected in UNIX file system). Refer to the appendix on Advanced Server Registry in the *Advanced Server/9000 Administrator's Guide* for more details on use of the registry.

LAN Manager 1.x has interlock=exclusive and interlock=readonly modes to support the PacerShare product. Advanced Server/9000 does not have equivalent locking functionality.

Note also that the `net file` command on the server does not list locks taken out on files due to OPEN calls. The command only shows locks taken out on files due to explicit LOCK calls by clients.

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